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THE UNITED STATES OF AMERICA

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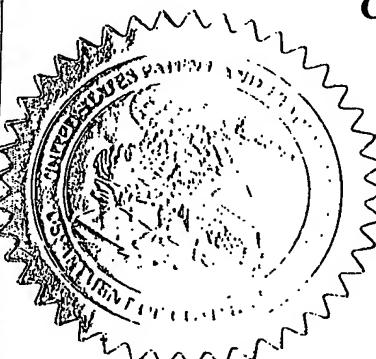
APPLICATION NUMBER: 60/458,643

FILING DATE: March 28, 2003

RELATED PCT APPLICATION NUMBER: PCT/US04/09610

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03/28/03
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03-31-03 00458643 03282003 APPROV

PROVISIONAL APPLICATION COVER SHEET

This is a request for filing a PROVISIONAL APPLICATION under 37 CFR 1.53(c).

DOCKET NUMBER: B01075.70040
Express Mail Label No. EV 208 517 808 US
Date of Deposit: March 28, 2003

03/28/03
JC962 U.S. PTO

INVENTOR(S)/APPLICANT(S)

LAST NAME	FIRST NAME	MIDDLE INITIAL	RESIDENCE (CITY AND EITHER STATE OR FOREIGN COUNTRY)
Stevens-Wright	Debbie		North Andover, MA

Additional inventors are being named on the separately numbered sheets attached hereto.

TITLE OF THE INVENTION (280 characters max)

METHOD AND APPARATUS FOR SELECTING TEMPERATURE/POWER SET POINTS IN ELECTROPHYSIOLOGY PROCEDURES

CORRESPONDENCE ADDRESS

CUSTOMER NUMBER:


23628

ENCLOSED APPLICATION PARTS (check all that apply)

Specification - Number of Pages = 11

Drawing(s) - Number of Sheets

Application Data Sheet, See 37 CFR 1.76

Return receipt postcard

The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.

No

Yes, the name of the U.S., Government Agency and the Government Contract Number are:

Other: _____

METHOD OF PAYMENT (check all that apply)

A check is enclosed to cover the Provisional Filing Fees.

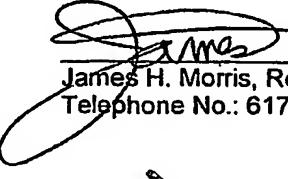
The Commissioner is hereby authorized to charge any additional fees or credit overpayment to Deposit Account 23/2825. A duplicate of this sheet is enclosed.

Small Entity Status is claimed.

PROVISIONAL FILING FEE AMOUNT \$ 160.00

Respectfully submitted,

March 28, 2003
Date


James H. Morris, Reg. No. 34,681
Telephone No.: 617-720-3500

TITLE: Ablation characteristics - power considerations

From Page No.

Set point of target voltage for power control calibration

Dependence

Depending upon the set point extension of electrode forward flow boundaries of the ablation domain, the power requirements and the temperature sensing requirements will vary with the electrode design. In addition, the flow conditions and proximity of the electrode to the tissue surface will effect these requirements. Traditionally a single set point has been applied across varying flow conditions, geometries and tissue electrode gaps. The imposed magnitude (volume enclosed and depth) in which the set point (a range of temperature) would depend upon.

Impedance
Tissue gap
Flow

The impedance at the start of ablation is dependent upon the surface geometry of the electrode. The impedance increases as the outer surface of the electrode extends towards the boundary of the ablation domain. Larger electrodes, requiring more power, and have lower impedance.

*Larger tissue gaps, predominantly are beneficial at higher flows and smaller gaps beneficial at lower flows.

The difference between tissue temperature and electrode temperature increases with increasing flow. Therefore a given design will require a lower set point at higher flows.

Below is an example of how the FEA analysis can be used to predict the temperature setpoint for known impedance, electrode geometry, tissue temperature and flow.

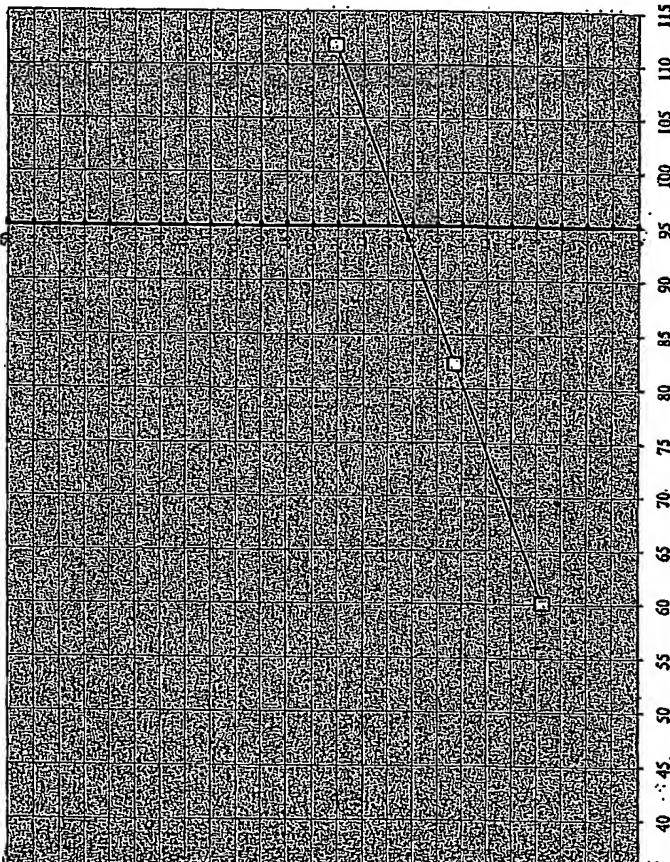
To Page No.

60456643 6052303

Title: *Alerry-Ham - Temperature / Power Select.*

Frai

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Dennis L. Johnson

Liberation

Page No.

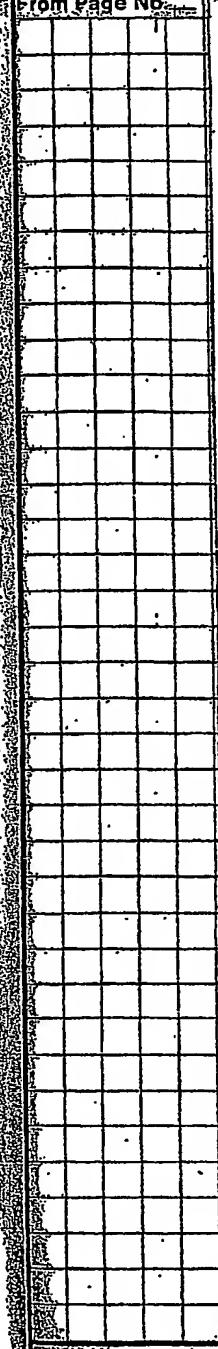
TITLE: _____

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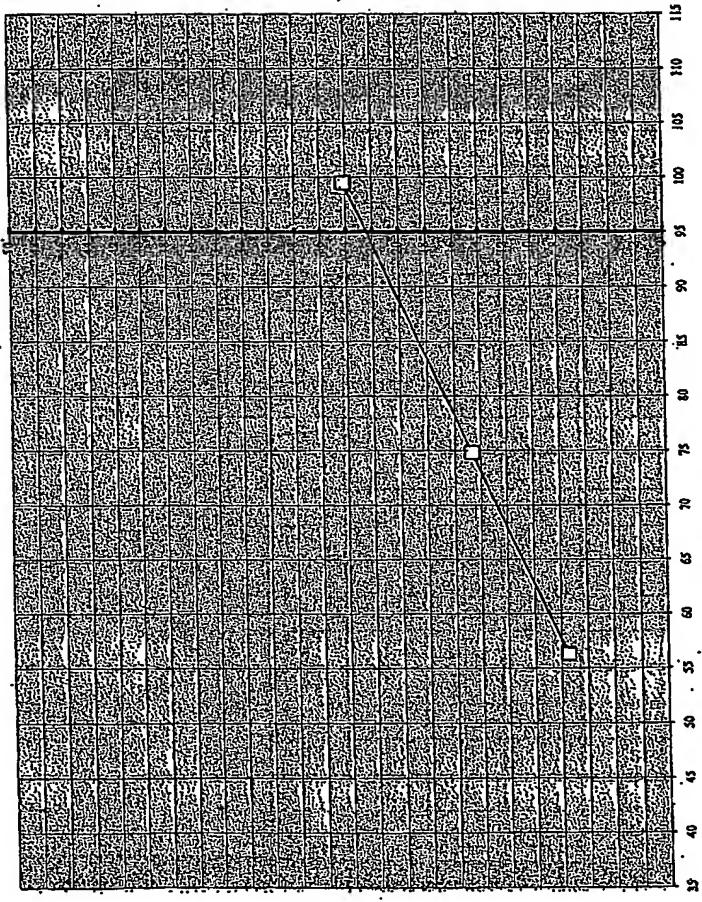
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TITLE: *Microscopic Temperature of Human Skin*

From Page No.



6.



Fusse Temperature



Page No.

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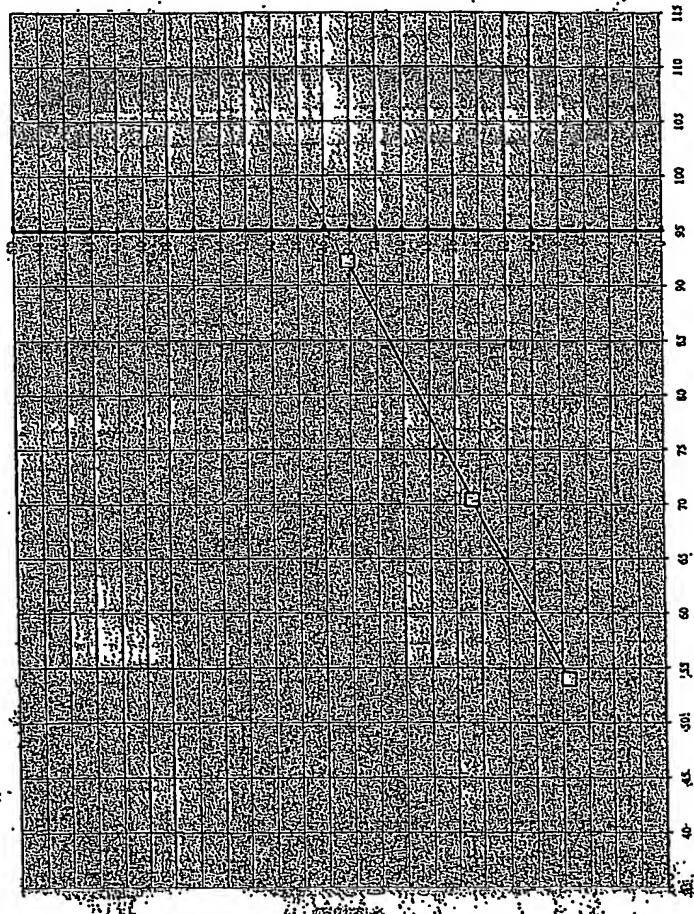
16.

TITLE: *Temperature vs Temperature of water bath*

TITLE:

From Pa

85



Graph of Temperature vs Temperature of water bath

Top Page No.

From Pa

60458543 032805

TITLE: *Temperature of Plastic Sheet*

17

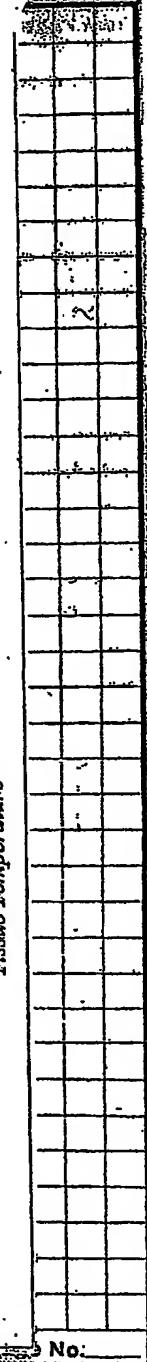
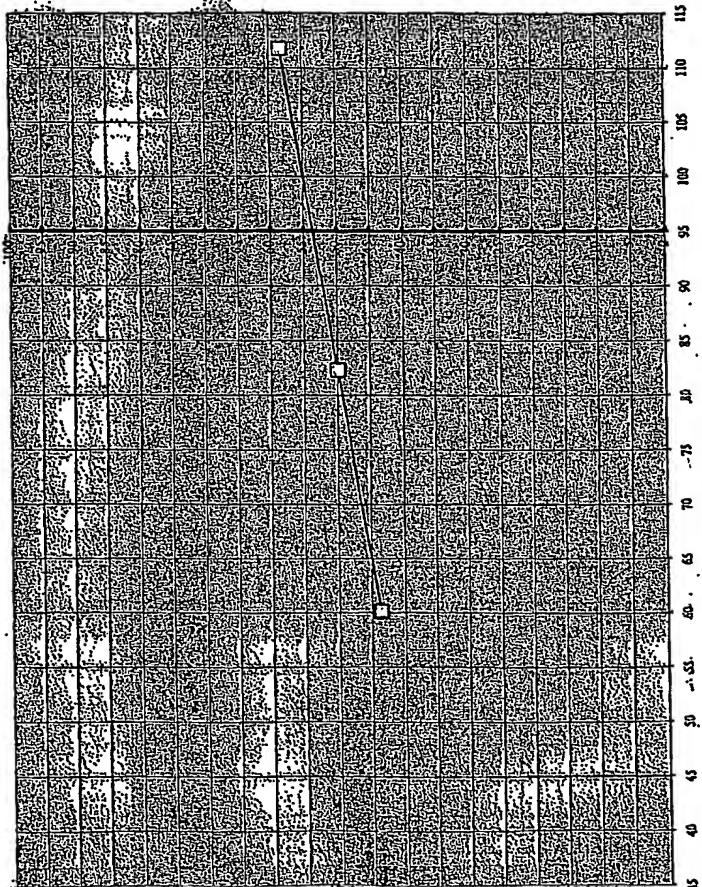
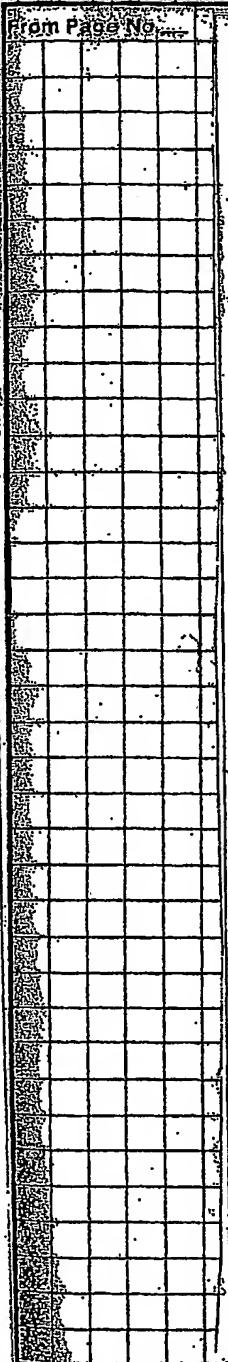
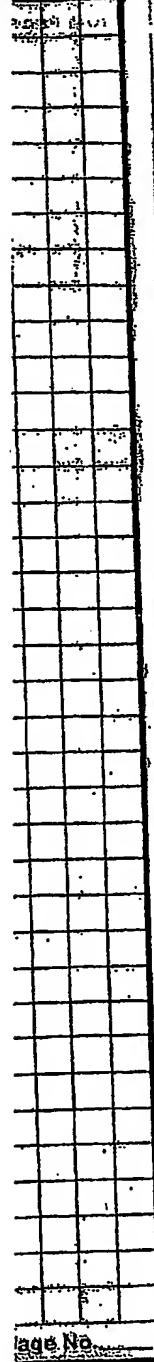
From Page No.

Plastic Temperature

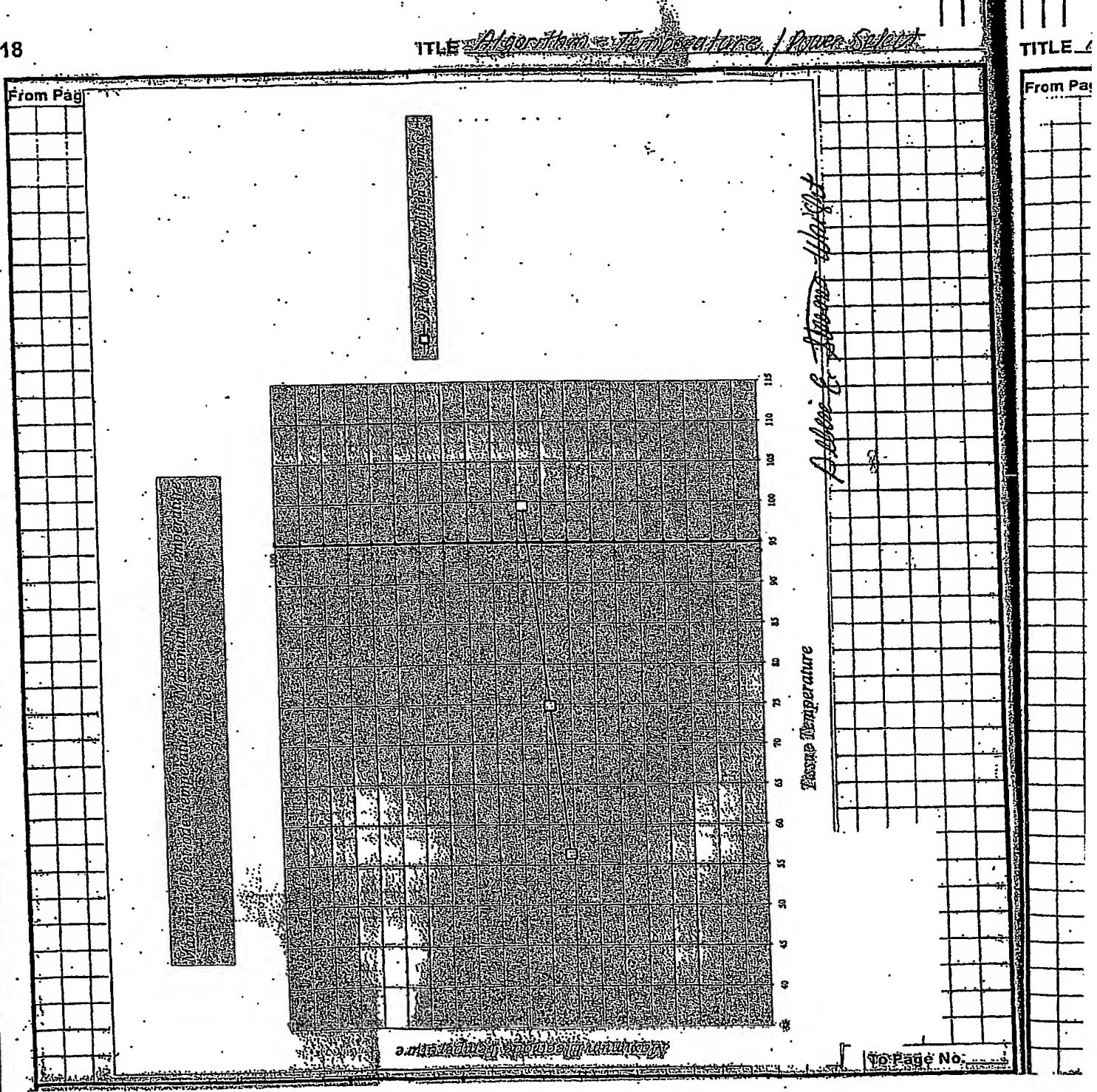
Maximum Inside Temperature

Plastic Temperature

No:



18



The Effect of Temperature on Cellulose

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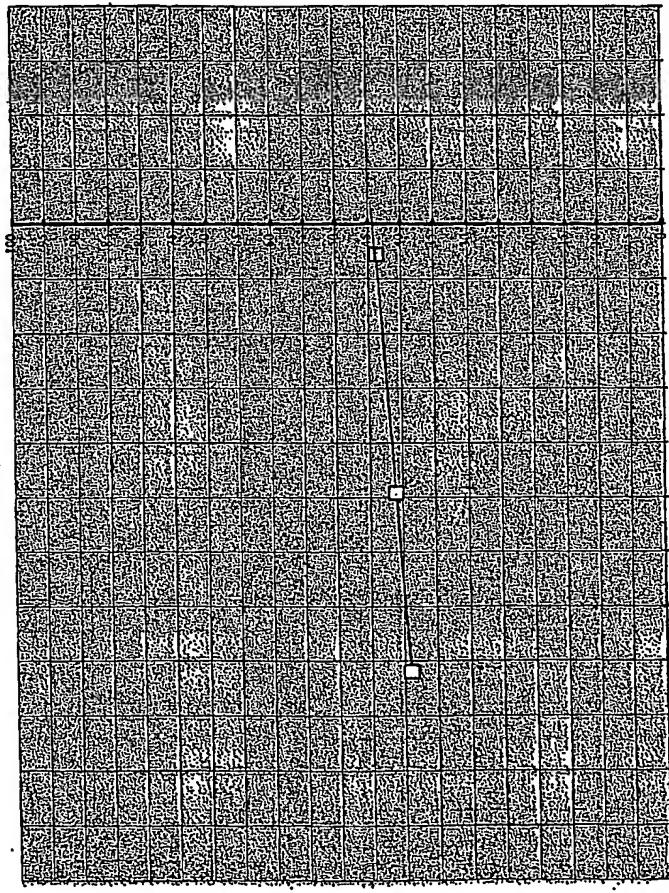


Table I. ~~Effect of~~ that of

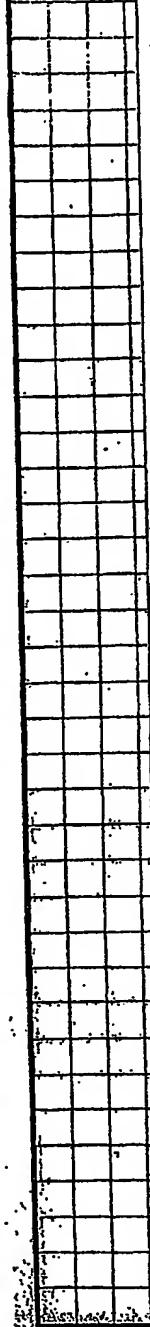
Tissue Temperature

20

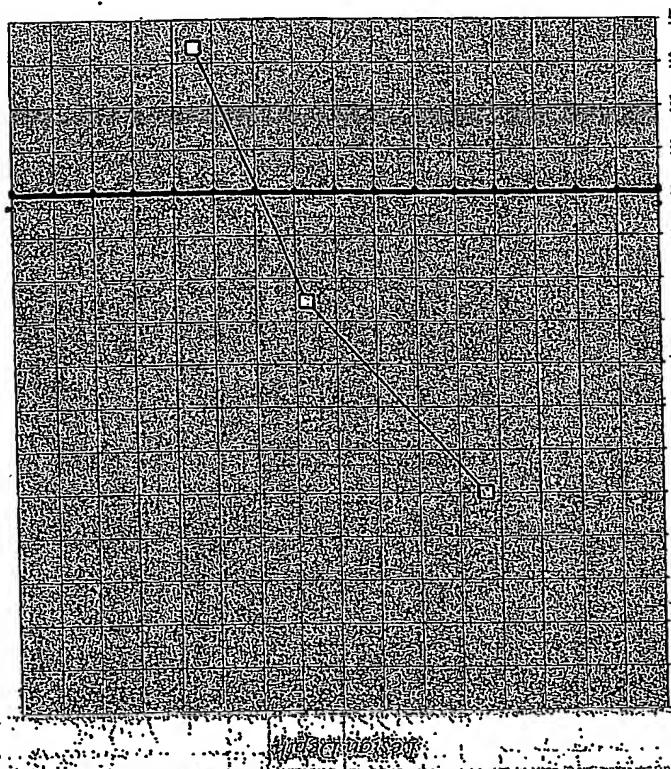
TITLE Algorithm to Temperature / Power Select

TITLE

From Page



From



From Temperature

From Power Select

15 Page 02

10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90

21

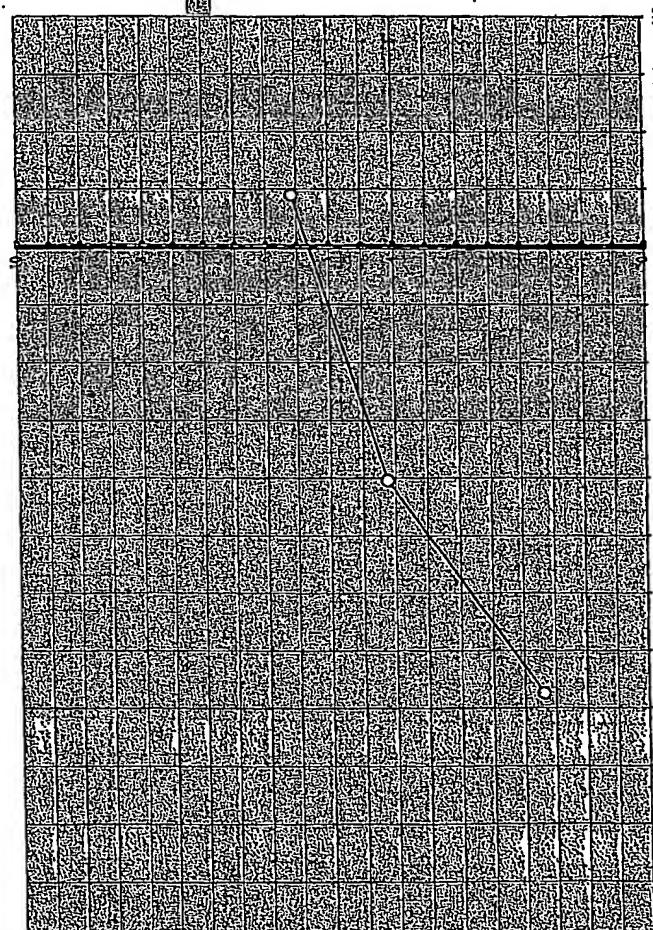
Temperature (Pounds/Square Inch)

From Page No.

15
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
-60
-65
-70
-75
-80
-85
-90

Positive Temperature

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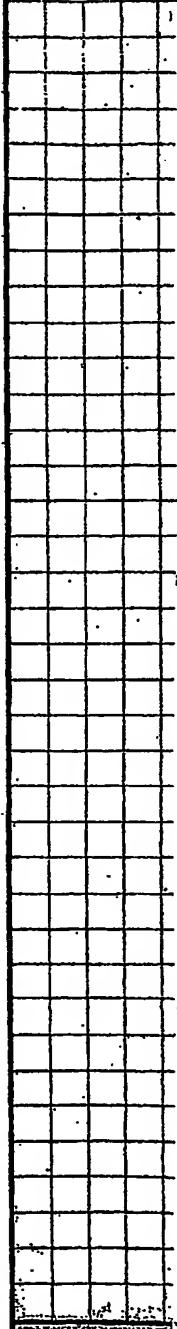


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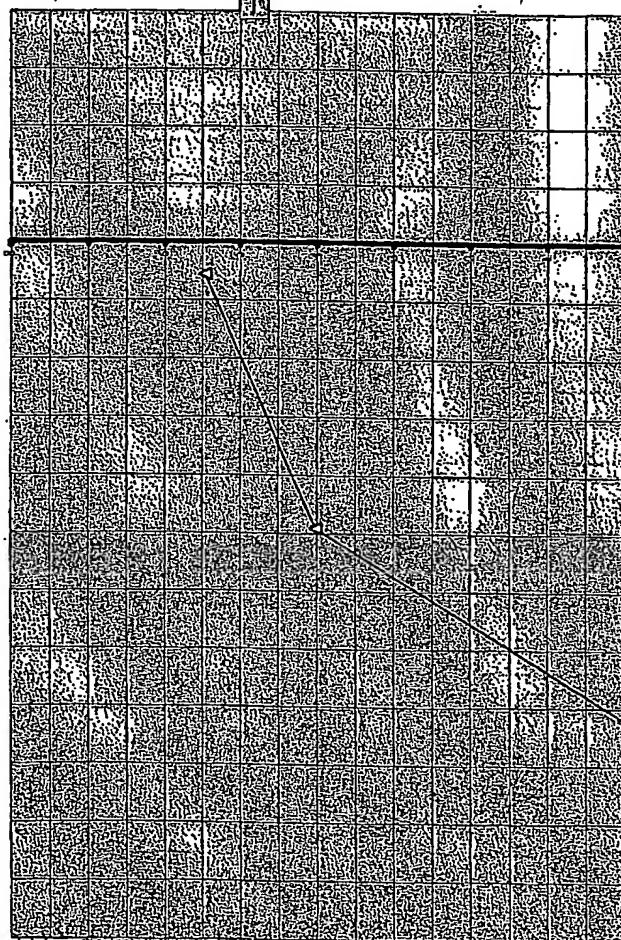
100 105 110 115

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DEG C
TITLE *Delta E Algorithm - Temperature of Power*

From Page No.



Delta E Algorithm



Delta E Algorithm

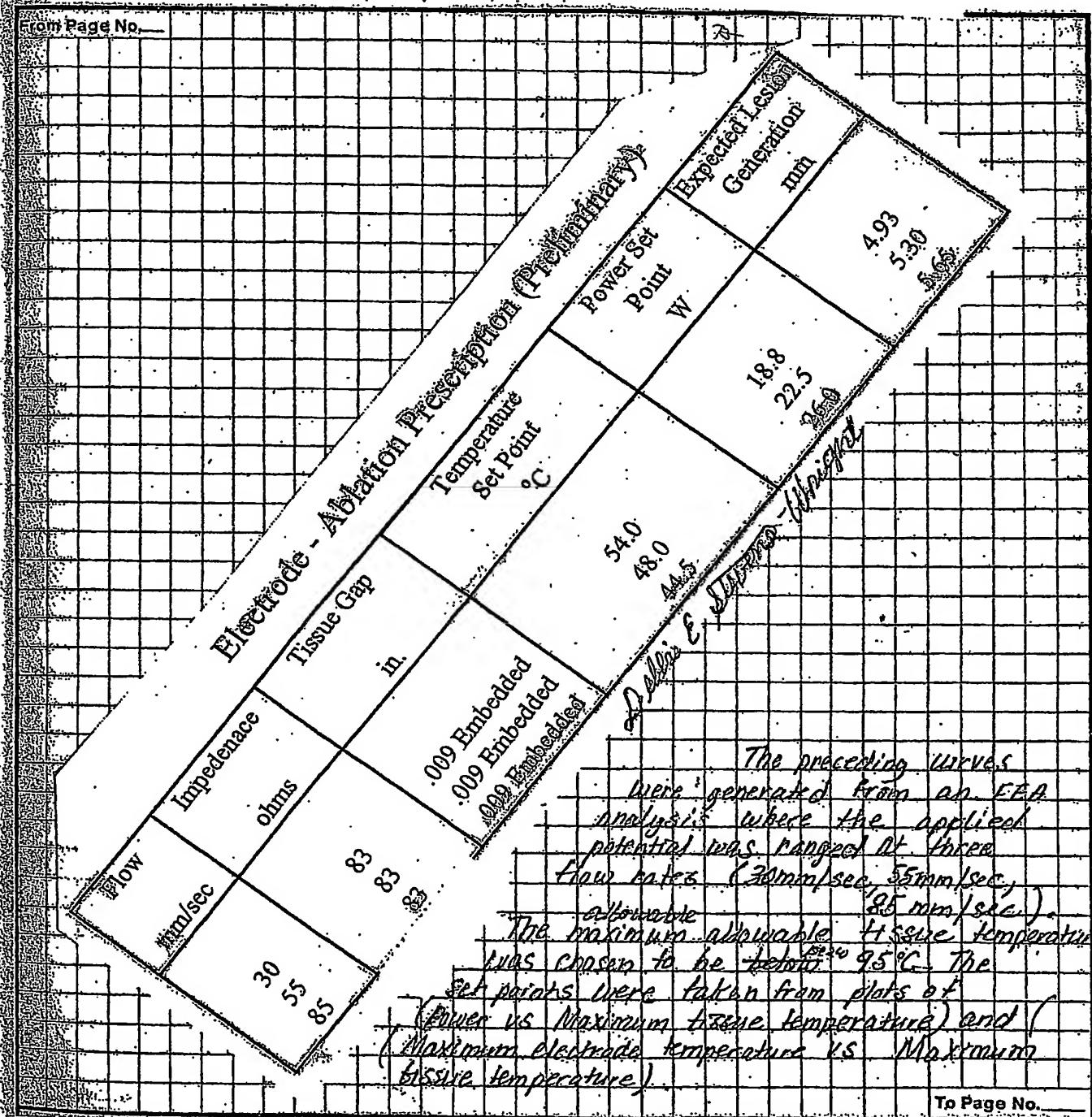
Assume Temperature

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TITLE

From F

TABLE Algorithm - Temperature / Power Selection



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